

AMENDMENT(S) TO THE CLAIMS:

The following listing of claims will replace all prior versions, and listings, of claims on the application. All claims are set forth below with one of the following annotations.

- (Original): Claim filed with the application.
- (Currently amended): Claim being amended in the current amendment paper.
- (Canceled): Claim cancelled or deleted from the application. No claim text is shown.
- (Withdrawn): Claim still in the application, but in a non-elected status.
- (New): Claim being added in the current amendment paper.
- (Previously presented): Claim added or amended in an earlier amendment paper.
- (Not entered): Claim presented in a previous amendment, but not entered or whose entry status unknown. No claim text is shown.

1. (Currently amended) An interactive spatialized audiovisual system for linking a plurality of remote user terminals, the system comprising:

a ~~networked computer~~ processing system coupled to a network; and;

an associated user database coupled to or part of the processing system, the user database including user data, including user status information for each corresponding user,

wherein the processing system is configured to:

input means for receiving at the computer receive a plurality of audio streams and associated locating data from the remote user terminals each audio stream corresponding to a user as a source of audio, the locating data for virtually locating the users relative to one another within a virtual user environment;

selection means for enabling selection of select at least a first one group of at least one of the plurality of audio streams based on status information in the user database, each group corresponding to one of the users,

combine at least some of the plurality of audio streams to form a combined stream, and

output means for outputting send to each of at least one of the remote user terminals via the network the respective selected group of audio streams and associated locating data corresponding to the user of the remote user terminal, and

send to the at least one of the remote user terminals via the network a function of the combined stream; the function possibly user dependent,

wherein, a particular remote user terminal coupled to the network and corresponding to a particular user is configured to:

receive the sent group of audio streams and the function of the combined stream;

display a visual representation of the virtual user environment, including representations of at least some of the users; and

for spatialization of the selected group of audio streams relative to a first listener-based audio reference frame which is substantially coherent with visual representations of the audio sources defined by the locating data at a first user terminal-convert the audio streams of the group corresponding to the particular user and the function of the combined stream to a pair of audio headphones signals including binauralized reverberant signals generated according to the combined stream,

wherein the converting includes spatializing the audio streams of the group such that the particular user, listening to the headphone signals over headphones, has the sensation that the audio streams of the group are emanating from their respective user locations in the virtual user environment relative to the location of the particular user, and

wherein the spatializing includes HRTF processing to take into account the orientation and location of the particular user in the virtual user environment, and to take into account direct sounds and early echoes, and reverberation according to a non-spatial combination of audio streams.

2. (Currently amended) A system according to claim 1, ~~further comprising first~~ spatialization means for spatializing the selected group of audio streams wherein the processing system is further configured to carry out at least part of the converting of the audio streams of each group of audio streams.
3. (Currently amended) A system according to claim 1, ~~further comprising merging means for merging at least some of the audio streams into a merged audio stream for transmittal to the user terminal, and second spatializing means for spatializing wherein~~ the processing system is further configured to spatialize a reverberantly processed version of the combined merged stream so as to provide for a spatialized background audio effect in the audio reference frame at the user terminal such that the particular user listening to the headphone signals over headphones perceives a reverberant background formed from the combined stream.
4. (Currently amended). A system according to claim 1, ~~wherein the selection means are arranged to select different groups of audio streams according to different selection processes based on the user status information in the user database, for transmission to the corresponding user terminals at least part of the spatializing occurs at the~~ processing system such that the sending of a group of audio streams to the particular user is in at least a partially spatialized form.
5. (Currently amended) A system according to claim 1, ~~wherein the user status information used in the selecting the group to send to a particular user includes one or more of is chosen from a group including~~ user location data which serves to locate the particular user in the virtual environment, user orientation data which serves to orientate the particular user both with respect to the other users and to the virtual environment, user

listening status information for the particular user, and/or user talking status information for the particular user.

6. (Currently amended) A system according to claim 5, wherein the user listening status information used in the selecting the group to send to a particular user is arranged to allow the particular user to listen to other selected users or groups of users in the environment.
7. (Currently amended) A system according to claim 5, wherein the ~~selection means~~ includes a selector for selecting M closest audio sources from N audio sources selecting of a group of a particular number of one or more audio streams to send to a particular user includes selecting the closest particular number of other users within the virtual environment.
8. (Currently amended) A system according to claim 5, wherein the ~~selection means~~ includes a selector for selecting M closest audio sources from N audio sources selecting of a group of a particular number of one or more audio streams to send to a particular user includes selecting for enabling the selection of M the loudest particular number of sources based on at least one of the following, namely the amplitude of the source signal audio in the audio stream and/or the distance of the source of the audio stream from the listener particular user within the virtual environment.
9. (Currently amended) A system according to claim 5, wherein the ~~selection means~~ includes a selector for enabling a user-driven selection process determined by the subject user or other users selecting of a group of a particular number of one or more audio streams to send to a particular user includes selecting according to input from the particular remote user terminal or from other remote user terminals.
10. (Currently amended) A system according to claim 5, wherein the ~~selection means~~ includes a selector for enabling selecting of a group of a particular number of one or more audio streams to send to a particular user includes selecting according to input

~~from a moderator-driven selection process in which a "moderator" in the a moderator~~
~~able to control the talking and listening status of the other users.~~

11. (Currently amended) A system according to claim 5, ~~wherein the virtual environment~~
~~has one or more geographical or topological features arranged to affect the listening~~
~~capability of users in the virtual environment and wherein the selection means~~
~~includes a selector for enabling a selection selecting of a group of a particular number~~
~~of one or more audio streams to send to a particular user includes selecting based on~~
~~the geography or topology of the virtual environment, in which geographical or~~
~~topological features of the environment are arranged realistically to affect the listening~~
~~capability of users in the environment, so as to provide a coherent visual and sonic~~
~~landscapes.~~
12. (Currently amended) A system according to claim 11, wherein the one or more features
include one or more barriers defining one or more chat rooms, ~~with~~ wherein at least
some of the audio streams in a particular room ~~being are~~ summed ~~or merged~~ and
spatialized ~~and wherein reverberation processing is performed~~ to achieve a
background reverberation effect characteristic of that particular room.
13. (Currently amended) A system according to claim 11, ~~further comprising means for~~
~~merging and spatialising wherein the processing system is further configured to~~
~~combine~~ the audio streams in adjoining rooms or areas that have an entrance or exit in
the virtual environment of the particular room or area where the particular user is
located so as to create "threshold" an adjoining room signal located at the
entrance/exit or exit, wherein point to the room adjoining the particular adjoining
room representations signal is representative of the combined noise emanating from
the room or area adjoining the particular room or area at the entrance or exit said
adjoining room or area.
14. (Currently amended) A system according to ~~claim 11~~ claim 13, ~~further comprising~~
~~means for generating wherein the processing system is further configured to generate~~
~~for the particular room or area a "dry" an in-room signals signal representative of the~~

background due to audio streams emanating from users within the particular room or area and optionally including a weighted reverberant version of any adjoining room signal emanating from users in any room adjoining the particular room or area, wherein said generating includes combining the audio streams emanating from users within the particular room or area and optionally a weighted reverberant version of the combined signals emanating from users in the room or rooms or area or areas adjoining the particular room or area using summed non-reverberated audio sources.

15. (Currently amended) A system according to claim 13, ~~further comprising means for generating wherein the processing system is further configured to generate for the particular room or area a "wet" room signals using summed reverberated audio sources~~ signal representative of a reverberant version of the adjoining room signal formed as a combining of the signals emanating from users in the room adjoining the particular room or area.

16.-21. (Cancelled)

22. (Currently amended) A method of ~~providing an interactive spatialized audiovisual facility operating a processing system in communication with a plurality of remote user terminals~~ comprising:

~~receiving from a plurality of user-based audio sources a plurality of corresponding audio streams and associated locating data from the remote user terminals, each audio stream corresponding to a user as a source of audio, the locating data capable of virtually locating the audio sources relative to one another within a virtual user environment;~~

~~determining user status data for one or more of the users;~~

~~selecting at least some one group of at least one of the plurality of audio streams based on the user status data, each group corresponding to one of the users;~~

~~combining at least some of the plurality of audio streams to form a combined stream; and~~

transmitting to each of at least one of the remote user terminals the respective selected group of audio streams and associated locating data corresponding to the user of the remote user terminal and selected audio streams to a first listener destination for enabling the display of visual representations of the virtual locations of at least some of the audio sources within the virtual environment; and

transmitting to the at least one of the remote user terminals a function of the combined stream; the function possibly user dependent,

wherein, a particular remote user terminal corresponding to a particular user is configured to:

receive the transmitted group of audio streams and the function of the combined stream;

display a visual representation of the environment, including representations of at least some of the users; and

spatializing the selected audio streams relative to a first listener-based audio reference frame which is substantially coherent with the visual representations of the audio sources either before or after the audio streams are transmitted to the first listener destination-convert the audio streams of the group corresponding to the particular user and the function of the combined stream to a pair of audio headphones signals including binauralized reverberant signals generated according to the combined stream,

wherein the converting includes spatializing the audio streams of the group such that the particular user, listening the headphone signals over headphones, has the sensation that the audio streams of the group are emanating from their respective user locations in the virtual user environment relative to the location of the particular user, and

wherein the spatializing includes HRTF processing to take into account the orientation and location of the particular user in the virtual user environment, and to take into account the orientation and location of the particular user in the virtual user

environment, and to take into account direct sounds and early echoes, and
reverberation according to a non-spatial combination of audio streams,

wherein the combined stream is spatialized either before or after transmitting so as to
provide a background audio effect within the virtual environment.

23. (Currently amended) A method according to claim 22, further comprising repeating the
determining and the selecting steps to allow for the case that enabling: the user status
data to be is altered, reading the altered user status data, and selecting at least one of
the audio streams based on the altered user status data, wherein at least one of the
audio streams selected using the altered user status data is different to the prior
selected streams.
24. (Currently amended) A method according to claim 22, which includes the steps of:
wherein the virtual environment has one or more barriers defining two or more rooms
or areas, the method further comprising:
combining the audio streams in adjoining rooms or areas that have an entrance or
exit in the virtual environment of the particular room or area where the particular user
is located so as to create an adjoining room signal located at the entrance or exit,
wherein the adjoining room signal is representative of the combined noise emanating
from the room or area adjoining the particular room or area at the entrance or exit
merging at least some of the audio streams into at least one merged audio stream,
transmitting the merged audio stream to the first listener destination, and spatializing
the merged audio stream either before or after transmitting it so as to provide a
background audio effect within the virtual environment.
25. (Currently amended) A method according to claim 24, in which the merged audio
stream includes audio streams which have not been individually selected further
comprising:
generating for the particular room or area in the virtual user environment an in-
room signal representative of the background due to audio streams emanating from

users within the particular room or area and optionally including a weighted reverberant version of the adjoining room signal emanating from users in any room adjoining the particular room or area, wherein said generating includes combining the audio streams emanating from users within the particular room or area and optionally a weighted reverberant version of the combined signals emanating from users in the room or rooms or area or areas adjoining the particular room or area.

26. (Currently amended) A method according to claim 24, wherein the combining the audio streams in adjoining rooms or areas includes generating for the particular room or area a room signal representative of a reverberant version of combination of the signals emanating from users in the room adjoining the particular room or area ~~of~~ providing an interactive spatialized audiovisual facility comprising:
- ~~receiving from a plurality of user-based audio sources a plurality of corresponding audio streams and associated locating data capable of virtually locating the audio sources relative to one another within a virtual environment;~~
 - ~~determining user status data;~~
 - ~~selecting at least some of the audio streams based on the user status data in a first selection process;~~
 - ~~transmitting the selected audio streams and associated locating data to a first listener destination for enabling the display of visual representations of the virtual locations of at least some of the selected audio sources within the virtual environment;~~
 - ~~spatializing the selected audio streams relative to a first listener-based audio reference frame which is substantially coherent with the visual representations of the audio sources either before or after the transmitting said streams;~~
 - ~~selecting at least some of the audio streams in a second selection process; and~~

- transmitting the selected audio streams and associated locating information to a second listener destination for enabling the display of visual representations of the locations of at least the selected audio sources; and
- spatializing at the second listener destination the selected audio streams in an audio reference frame which is substantially coherent with the visual representations of the audio sources, either before or after transmitting said streams.

27. (Canceled).

26. A method of providing an interactive spatialized audiovisual facility comprising:
- receiving from a plurality of user-based audio sources a plurality of corresponding audio streams and associated locating data capable of virtually locating the audio sources relative to one another within a virtual environment;
 - determining user status data;
 - selecting at least some of the audio streams based on the user status data in a first selection process;
 - transmitting the selected audio streams and associated locating data to a first listener destination for enabling the display of visual representations of the virtual locations of at least some of the selected audio sources within the virtual environment;
 - spatializing the selected audio streams relative to a first listener-based audio reference frame which is substantially coherent with the visual representations of the audio sources either before or after the transmitting said streams;
 - selecting at least some of the audio streams in a second selection process; and
 - transmitting the selected audio streams and associated locating information to a second listener destination for enabling the display of visual representations of the locations of at least the selected audio sources; and

~~spatializing at the second listener destination the selected audio streams in an audio reference frame which is substantially coherent with the visual representations of the audio sources, either before or after transmitting said streams.~~

27. A method according to claim 26, wherein multiple selection processes are used to select the audio streams according to at least one predetermined algorithm, the selected audio streams and associated locating information are transmitted to multiple listener destinations, and visible representations of the locations of at least the selected audio streams are displayed at the multiple listener destinations, with each of the selected audio streams being spatialized at the multiple listener destinations or before they are transmitted thereto in audio reference frames which are substantially coherent with the visible representations of the audio sources.

28. (Currently amended) A system user terminal for providing participating in a for spatialized conversation ~~over in~~ in a network environment, the user terminal coupled to a computer network capable of streaming audio streams and associated spatialization information to the user terminal, the user terminal comprising:

- a plurality of user terminals;
- a computer network capable of streaming audio streams to the user terminals, each of the audio streams including associated spatialization information;
- a rendering system configured to:
 - accept for rendering the a selected group of audio streams selected from a plurality of audio streams, each stream corresponding to a user at a user location in a virtual user environment to the user terminal;
 - accept associated locating data for virtually locating the users associated with the group's audio streams relative to one another within the virtual user environment.

accept a function of a combined stream formed by combining at least some of the plurality of audio streams; and

convert the audio streams of the group and the function of the combined stream to a pair of audio headphones signals including binauralized reverberant signals generated according to the combined stream,

wherein the converting includes spatializing the audio stream of the group to predetermined virtual locations around a user using the associated spatialization information such that the particular user, listening to the headphone signals over headphones, has the sensation that the audio streams of the group are emanating from their respective user locations in the virtual user environment relative to the location of the particular user; and

a user interface for virtually spatially locating a user amongst the audio streams including a display configured to present a visual representation of the virtual user environment, including representations of at least some of the users,

wherein the spatializing by the rendering system includes HRTF processing to take into account the orientation and location of the particular user in the virtual user environment, and to take into account direct sounds and early echoes, and reverberation according to a non-spatial combination of audio streams spatializes the audio streams so as to maintain a substantially spatially coherent audio reference frame around the user, the user interface includes a visual indicator of the spatial position of each of the audio streams around a listener and the rendering system maintains a substantially spatially coherent audio reference frame relative to the visual indicator.

29. (Currently amended) A system user terminal according to claim 28, wherein the virtual environment has one or more barriers defining two or more rooms or areas, wherein the particular user is located in the virtual environment in a particular room or area that includes an adjoining room or area that has an entrance or exit in the virtual user

environment, wherein the rendering system is further configured to accept an adjoining room signal located at the entrance or exit, and wherein the adjoining room signal is representative of the combined noise emanating from the room or area adjoining the particular room or area at the entrance or exit each stream includes user ownership information and the system includes an audio stream access interface for granting access to the audio streams.

30. (Currently amended) A system user terminal according to ~~claim 28~~ claim 29, wherein the rendering system is configured to receive an in-room signal representative of the background due to audio streams emanating from users within the particular room or area and optionally including a weighted reverberant versions of any adjoining room signal emanating from users in any room or area adjoining the particular room or area, wherein the in-room signal is formed by a process that includes combining the audio streams emanating from users within the particular room or area and optionally a weighted reverberant version of the combined signals emanating from users in the room or rooms adjoining the particular room or area an attenuator to attenuate audio sources located virtually remotely from a current user and a merger to merge audio sources located virtually remotely from a current user.
31. (Currently amended) A system user terminal according to ~~claim 30~~ claim 29, wherein the adjoining room signal is formed by a process that includes combining the audio streams in adjoining rooms or areas including generating for the particular room or area a room signal representative of a reverberant version of combination of the signals emanating from users in the room adjoining the particular room or area rendering system is located adjacent a user and the audio sources are streamed over a computer network.
32. (Canceled).
33. (Currently amended) A computer-readable medium having stored thereon executable instructions for causing a ~~computer to provide an interactive spatialized audiovisual facility, the instructions being arranged to that when executed by one or more~~

processors of a processing system in communication with a plurality of remote user terminals, cause implementing a method comprising:

receiving receive from a plurality of user-based audio sources a plurality of corresponding audio streams and associated locating data from the remote user terminals, each audio stream corresponding to a user as a source of audio, the locating data capable of virtually locating the audio sources relative to one another within a virtual user environment;

determining determine user status data for one or more of the users;

selecting select at least some one group of at least one of the plurality of audio streams based on the user status data, each group corresponding to one of the users;

combining at least some of the plurality of audio streams to form a combined stream; and

transmit transmitting to each of at least one of the remote user terminals the respective selected group of audio streams and associated locating data corresponding to the user of the remote user terminal and selected audio streams to a first listener destination for enabling the display of visual representations of the virtual locations of at least some of the audio sources within the virtual environment; and

transmitting to the at least one of the remote user terminals a function of the combined stream; the function possibly user dependent,

wherein, a particular remote user terminal corresponding to a particular user is configured to:

receive the transmitted group of audio streams and the function of the combined stream;

display a visual representation of the environment, including representations of at least some of the users; and

- spatialize convert the selected audio streams relative to a first-listener-based audio reference frame which is substantially coherent with the visual representations of the audio sources of the group corresponding to the particular user and the function of the combined stream to a pair of audio headphones signals, including binauralized reverberant signals generated according to the combined stream,
- wherein the converting includes spatializing the audio streams of the group such that the particular user, listening the headphone signals over headphones, has the sensation that the audio streams of the group are emanating from their respective user locations in the virtual user environment relative to the location of the particular user, and
- wherein the spatializing includes HRTF processing to take into account the orientation and location of the particular user in the virtual user environment, and to take into account direct sounds and early echoes, and reverberation according to a non-spatial combination of audio streams,
- wherein the combined stream is spatialized either before or after transmitting so as to provide a background audio effect within the virtual environment.
34. (Currently amended) A computer-readable medium according to claim 33, wherein the virtual environment has one or more barriers defining two or more rooms or areas, wherein the method further comprises combining the audio streams in adjoining rooms or areas that have an entrance or exit in the virtual user environment of the particular room or area where the particular user is located so as to create an adjoining room signal located at the entrance or exit, and wherein the adjoining room signal is representative of the combined noise emanating from the room or area adjoining the particular room or area at the entrance or exit having stored thereon executable instructions for causing a computer to provide an interactive spatialized audiovisual facility, the instructions being arranged to:

- receive from a plurality of user-based audio sources a plurality of corresponding audio streams and associated locating data capable of virtually locating the audio sources relative to one another within a virtual environment;
- determine user status data;
- select at least some of the audio streams based on the user status data in a first selection process;
- transmit the selected audio streams and associated locating data to a first listener destination for enabling the display of visual representations of the virtual locations of at least some of the selected audio sources within the virtual environment;
- spatialize the selected audio streams relative to a first listener-based audio reference frame which is substantially coherent with the visual representations of the audio sources;
- select at least some of the audio streams in a second selection process;
- and transmit the selected audio streams and associated locating information to a second listener destination for enabling the display at the second listener destination of visual representations of the locations of at least the selected audio sources, and for spatializing at the second listener destination the selected audio streams in an audio reference frame which is substantially coherent with the visual representations of the audio sources.

35. (Currently amended) A method of operating a particular user terminal that is part of an interactive spatialized audio facility including a networked computer and a plurality of user terminals linked to the networked computer, including the particular user terminal, the method comprising:

transmitting from a the particular user terminal to the networked computer an audio stream generated by the a particular user and associated locating data capable of virtually locating the source of the audio stream generated by the user within a virtual

environment, such that the networked computer can select groups of audio streams corresponding to each user, for selective combination with corresponding selectively combine at least some of the audio streams, for each group select associated locating data for the sources of the audio streams in the group, wherein the selecting and is according to user status data available at the networked computer;

receiving at the particular user terminal a particular selected group of a plurality of audio streams selected on the basis of the user status data for the particular user, and further receiving associated locating data for virtually locating the users sources of the group's audio streams relative to one another within a virtual user environment;

receiving at the particular user terminal a function of a combined audio stream formed by combining at least some of the plurality of audio streams corresponding to the users;

generating at the user terminal visual representations of the locating data sources of the audio streams to indicate virtual locations of the sources in the virtual user environment, and

spatializing converting the selected group of audio streams and the function of the combined stream to a pair of audio headphones signals including binauralized reverberant signals generated according to the combined stream,

wherein the converting includes spatializing the audio stream of the group to the virtual locations of the sources of the selected group's audio streams such that the particular user, listening to the headphone signals over headphones, has the sensation that the audio streams of the selected group are emanating from their respective user locations in the virtual user environment relative to the location of the particular user, and relative to a first listener-based audio reference frame which is substantially coherent with the visual representations of the audio sources,

wherein the spatializing includes HRTF processing to take into account the orientation and location of the particular user in the virtual user environment, and to take into

account direct sounds and early echoes, and reverberation according to a non-spatial combination of audio streams.

36. (Currently amended) A method according to claim 35, wherein the virtual environment has one or more barriers defining two or more rooms or areas, and wherein the particular user is located in the virtual environment in a particular room or area that includes an adjoining room that has an entrance or exit in the virtual user environment, the method further comprising receiving at the user terminal an adjoining room signal representative of the combined noise emanating from the room or area adjoining the particular room or area and located at the entrance or exit between the particular room or area and the room or area adjoining the particular room or area a merged audio stream which is spatialized before or after receipt thereof to provide a spatialized background audio effect in the audio reference frame at the user terminal for playback to the user.

37. (Currently amended) A method according to claim 36, further comprising:

receiving an in-room signal representative of the background due to audio streams emanating from users within the particular room or area and optionally including a weighted reverberant versions of any adjoining room signal emanating from users in any room or area adjoining the particular room or area, wherein the in-room signal is formed by a process that includes combining the audio streams of the users emanating from users within the particular room or area and optionally a weighted reverberant version of the combined signals emanating from users in the room or rooms or rooms adjoining the particular room or area
computer-readable medium having stored thereon executable instructions for causing a computer to provide or operate an interactive spatialized audiovisual facility, the instructions including program segments arranged to implement a method, the method comprising:

receiving from a plurality of user-based audio sources a plurality of corresponding audio streams and associated locating data capable of virtually locating the audio sources relative to one another within a virtual environment;

- determining user status data;
 - selecting at least some of the audio streams based on the user status data;
 - transmitting the locating data and selected audio streams to a first listener destination for enabling the display of visual representations of the virtual locations of at least some of the audio sources within the virtual environment;
- and spatializing the selected audio streams relative to a first listener-based audio reference frame which is substantially coherent with the visual representations of the audio sources either before or after the audio streams are transmitted to the first listener destination.

38. (Currently amended) A computer-readable medium having stored thereon executable instructions that when executed by a processor in a particular user terminal, cause carrying out of a method of operating the a particular user terminal, the user terminal being part of an interactive spatialized audio facility including a networked computer and a plurality of user terminals linked to the networked computer, including the particular user terminal, for causing a computer to provide or operate an interactive spatialized audiovisual facility, the instructions including program segments arranged to implement a method, the method comprising:

transmitting from ~~a~~ the particular user terminal to the networked computer an audio stream generated by the a particular user and associated locating data capable of virtually locating the source of the audio stream generated by the user within a virtual environment, such that the networked computer can select groups of audio streams corresponding to each user, for selective combination with corresponding selectively combine at least some of the audio streams, for each group select associated locating data for the sources of the audio streams in the group, wherein the selecting and is according to user status data available at the networked computer;

receiving at the particular user terminal a particular selected group of a plurality of audio streams selected on the basis of the user status data for the particular user, and

further receiving associated locating data for virtually locating the users sources of the group's audio streams relative to one another within a virtual user environment;

receiving at the particular user terminal a function of a combined audio stream formed by combining at least some of the plurality of audio streams corresponding to the users;

generating at the user terminal visual representations of the locating data sources of the audio streams to indicate virtual locations of the sources in the virtual user environment, and

spatializing converting the selected group of audio streams and the function of the combined stream to a pair of audio headphones signals including binauralized reverberant signals generated according to the combined stream,

wherein the converting includes spatializing the audio stream of the group to the virtual locations of the sources of the selected group's audio streams such that the particular user, listening to the headphone signals over headphones, has the sensation that the audio streams of the selected group are emanating from their respective user locations in the virtual user environment relative to the location of the particular user, and relative to a first listener-based audio reference frame which is substantially coherent with the visual representations of the audio sources,

wherein the spatializing includes HRTF processing to take into account the orientation and location of the particular user in the virtual user environment, and to take into account direct sounds and early echoes, and reverberation according to a non-spatial combination of audio streams.

39. (Currently amended) A system according to claim 5, wherein the ~~selection means~~ includes at least one selector from the group consisting of selecting of a group of a particular number of one or more audio streams to send to a particular user includes selecting according to one or more of the criteria including:

~~a first selector for selecting a number M of the audio streams corresponding to the M closest audio sources users from the total number N of audio sources streams,~~

~~a second selector for enabling the selection of selecting the number M loudest sources audio streams based on at least one of the following, namely the amplitude of the source-signal of the audio stream and/or the distance of the source user corresponding to the audio stream from the listener particular user,~~

~~a third selector for enabling selecting according to a user-driven selection process determined by the subject particular user or one or more other users,~~

~~a fourth selector for enabling selecting according to a moderator-driven selection process in which a "moderator" in the environment is able to control the talking and listening status of the other users, and/or~~

~~a fifth selector for enabling a selection selecting based on the geography or topology of the virtual environment, in which features of the environment are arranged realistically to affect the listening capability of users in the environment, so as to provide a coherent visual and sonic landscapes.~~

40. (New) A computer-readable medium according to claim 34, wherein the method further comprises:

generating for the particular room or area in the virtual user environment an in-room signal representative of the background due to audio streams emanating from users within the particular room or area and optionally including a weighted reverberant version of the adjoining room signal emanating from users in any room adjoining the particular room or area, wherein said generating includes combining the audio streams emanating from users within the particular room or area and optionally a weighted reverberant version of the combined signals emanating from users in the room or rooms or area or areas adjoining the particular room or area.

41. (New) A computer-readable medium according to claim 34, wherein the combining the audio streams in adjoining rooms or areas includes generating for the particular room or area a room signal representative of a reverberant version of combination of the signals emanating from users in the room adjoining the particular room or area.
42. (New) A method according to claim 36, wherein the adjoining room signal is formed by a process that includes combining the audio streams in adjoining rooms or areas including generating for the particular room or area a room signal representative of a reverberant version of combination of the signals emanating from users in the room adjoining the particular room or area.
43. (New) A computer readable medium according to claim 38, , wherein the virtual environment has one or more barriers defining two or more rooms or areas, wherein the particular user is located in the virtual environment in a particular room or area that includes an adjoining room or area that has an entrance or exit in the virtual user environment, wherein the rendering system is further configured to accept an adjoining room signal located at the entrance or exit, and wherein the adjoining room signal is representative of the combined noise emanating from the room or area adjoining the particular room or area at the entrance or exit.
44. (New) A computer readable medium according to claim 43, wherein the method further comprises:

receiving an in-room signal representative of the background due to audio streams emanating from users within the particular room or area and optionally including a weighted reverberant versions of any adjoining room signal emanating from users in any room or area adjoining the particular room or area, wherein the in-room signal is formed by a process that includes combining the audio streams emanating from users within the particular room or area and optionally a weighted reverberant version of the combined signals emanating from users in the room or rooms adjoining the particular room or area.

45. (New) A computer readable medium according to claim 43, wherein the adjoining room signal is formed by a process that includes combining the audio streams in adjoining rooms or areas including generating for the particular room or area a room signal representative of a reverberant version of combination of the signals emanating from users in the room adjoining the particular room or area.